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J. Alex Halderman@jhalderm

1/ There's been lots of speculation about why Antrim County, MI initially reported incorrect results on Wed. The results have since been corrected, but people are naturally wondering what happened. Here's the likely technical explanation and my assessment.

1:48 PM · Nov 7, 2020

29

331

707

106

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2/ First, see @MichSOS's new statement about the issue: [michigan.gov/documents/sos/...](#) It was human error, isn't a sign of anything malicious, and couldn't impact the official results in any way. But what exactly happened?

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27

165

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3/ The problem relates to the "election definition"--configuration files that describe the races and candidates on the ballots across the county.

In October, Antrim noticed an error in its election definition: two local races had been omitted in certain precincts.

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20

132

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4/ They fixed this by recreating the election definition and installing the corrected version on the scanners for affected precincts. However, precincts where the ballot wasn't impacted by the change continued to use the original election definition.

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19

125

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5/ Because of this, each individual scanner tabulated ballots correctly, but there was a problem when it came time to combine the results from across precincts.

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19

121

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6/ Antrim uses @dominionvoting ballot scanners, which store vote totals on memory cards. Think of the data on the card like spreadsheet, with a number for each choice. But there aren't any labels--it's the election definition that says which row corresponds to which candidate.

6

27

138

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7/ When Antrim loaded the memory cards into its reporting system, the system interpreted them using the revised election definition. The numbers from scanners that used the old definition didn't line up with the right candidates, so the initial combined totals were very wrong.

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21

129

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8/ Fortunately, the individual scanners counted correctly. Each scanner prints its results on a paper "poll tape" at the end of election night, so Antrim re-entered the data from those printouts to get the correct overall totals.

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Bredt Family Science and Security and Internet @LetsEncry

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Lists



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3

22

140



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9/ Even if Antrim hadn't caught this problem so quickly, it would have been found and corrected during normal post-election procedures. Every Michigan jurisdiction checks the poll tapes against the reported totals before certifying results.

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26

171



J. Alex Halderman @jhalderm · Nov 7, 2020

10/ When the dust settles, we can investigate further and learn from these events. Defensive software engineering should help prevent such reporting glitches even if operators make a mistake. Still, Antrim responded well, and MI's failsafes worked as designed to ensure integrity.

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21

190



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11/ In conclusion, it appears that Antrim's problem:

* Isn't a sign of anything nefarious.

* Was corrected quickly.

* Has nothing to do with the version of the Dominion software in use.

* Is not a security vulnerability.

* Isn't likely to impact results in other jurisdictions.

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309



Crunchy Frog 🐸 @CrunchyFrog15 · Nov 7, 2020

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713K



CC @ccpolitics123 · Nov 12, 2020

Simply the fact that this CAN happen is disturbing. Even if this specific example was human error, it illustrates that someone with malicious intent



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could absolutely change votes if they wanted to by editing the configuration files.



Also why did it only flip votes one way?

2

2

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